In the claims: The claims are as follows.

1. (Currently amended) A method by which a radio receiver ~~(10)~~, in receiving a signal transmitted over a radio channel, estimates the impulse response of the radio channel based on a received training sequence ~~(Y)~~ included in the received signal, the method ~~including~~ comprising ~~a step (102) of performing a plurality of correlations of a correlation sequence (Y_e'') derived from the received training sequence (Y) with a replica (X_0) of the transmitted correlation sequence, characterized by a step (101) of~~ calculating ~~the~~ a ~~received~~ correlation sequence ~~(Y_e'') derived from the received signal~~ based on averaging symbols of the received training sequence, and performing a plurality of correlations using the calculated correlation sequence ~~(Y)~~.

2. (Currently amended) A method for estimating the impulse response ~~(c(t))~~ of a radio channel by which a radio receiver ~~(10)~~ receives a received signal including a received training sequence ~~(Y)~~ for which the radio receiver ~~(10)~~ knows a corresponding replica training sequence ~~(X_0)~~, the received training sequence ~~(Y)~~ including a received correlation sequence ~~(Y_e)~~ having a first end and a second and, and also including an additional part ~~(Y_{a2})~~ at the second end, with the additional part ~~(Y_{a2})~~ the same as a corresponding portion ~~(Y_{e1}) of the correlation sequence (Y_e)~~ at the first end of the received correlation sequence ~~(Y_e)~~, and likewise for the replica training sequence ~~(X_0)~~ so that it includes a replica correlation sequence ~~($X_{0,e}$)~~, the method ~~characterized by~~ comprising:

a) ~~a sequence calculating step~~ calculating a correlation sequence ~~(101), responsive to~~ using the received training sequence ~~(Y)~~, ~~of forming a calculated correlation sequence (Y_e'')~~ by averaging a predetermined number of symbols ~~(Y_{e1})~~ from the first

end of the received correlation sequence ~~(Y_e)~~ with a predetermined number of corresponding symbols from the additional part ~~(Y_{a2})~~ at the second end of the received training sequence ~~(Y)~~; and

b) ~~a correlating step (102), responsive to the calculated correlation sequence (Y_e''), of~~ performing a set of correlations of the calculated correlation sequence ~~(Y_e'')~~ with the replica training sequence ~~(X_0)~~, the set of correlations including a first correlation in which the calculated correlation sequence ~~(Y_e'')~~ is aligned with the replica correlation sequence ~~($X_{0,e}$)~~ and including subsequent correlations performed with the calculated correlation sequence ~~(Y_e'')~~ shifted for each next correlation by one or more symbols from the position in the immediately preceding correlation, so as to provide information useful in estimating the channel impulse response ~~($c(t)$)~~.

3. (Currently amended) A receiver ~~(10)~~, ~~characterized in that it is~~ operative according to the method of claim 1.

4. (Currently amended) A receiver ~~(10)~~, ~~characterized in that it is~~ operative according to the method of claim 2.

5. (Currently amended) A telecommunication system, including a base transceiver station and a user equipment, both of which include a receiver ~~(10)~~, ~~characterized in that~~ wherein both receivers ~~(10)~~ are operative according to the method of claim 1.

6. (Currently amended) A telecommunication system, including a base transceiver station and a user equipment, both of which include a receiver ~~(10)~~, ~~characterized in that~~ wherein both receivers ~~(10)~~ are operative according to the method of claim 2.

7. (Currently amended) A computer program product comprising: a

computer readable storage structure embodying computer program code thereon for execution by a computer processor in a receiver ~~(10)~~, ~~with~~ wherein said computer program code ~~characterized in that it~~ includes instructions for performing steps of a method according to claim 1.

8.   (Currently amended) A computer program product comprising: a computer readable storage structure embodying computer program code thereon for execution by a computer processor in a receiver ~~(10)~~, ~~with~~ wherein said computer program code ~~characterized in that it~~ includes instructions for performing the steps of a method according to claim 2.

9.   (New) An apparatus, comprising a processor, configured to:

        calculate a correlation sequence based on averaging symbols of a received training sequence resulting from a transmitted training sequence; and

        perform a plurality of correlations using the calculated correlation sequence.

10.   (New) An apparatus as in claim 9, wherein the received training sequence includes a received correlation sequence having a first end and a second and, and also includes an additional part at the second end, with the additional part the same as a corresponding portion at the first end of the received correlation sequence, wherein the processor is configured to calculate the correlation sequence by averaging a predetermined number of symbols from the first end of the received correlation sequence with a predetermined number of corresponding symbols from the additional part at the second end of the received training sequence.

11. (New) An apparatus as in claim 10, wherein for performing the plurality of correlations using the calculated correlation sequence, the processor is configured to perform a set of correlations of the calculated correlation sequence with a replica of the transmitted training sequence, with the set of correlations including a first correlation in which the calculated correlation sequence is aligned with the replica correlation sequence and including subsequent correlations performed with the calculated correlation sequence shifted for each next correlation by one or more symbols from the position in the immediately preceding correlation.

12. (New) A mobile station, comprising an apparatus as in claim 9, and a receiver for receiving the transmitted training sequence.

13. (New) A telecommunication system, including a base transceiver station and a mobile station, wherein both the base station and the mobile station include a receiver, and wherein both receivers are as in claim 12.

14. (New) An apparatus, comprising:

means for calculating a correlation sequence based on averaging symbols of a received training sequence resulting from a transmitted training sequence; and

means for performing a plurality of correlations using the calculated correlation sequence.

15. (New) An apparatus as in claim 14, wherein the received training sequence includes a received correlation sequence having a first end and a second and, and also includes an additional part at the second end, with the additional part the same as a corresponding portion at the first end of the received correlation

sequence, wherein the means for calculating the correlation
sequence is configured to average a predetermined number of
symbols from the first end of the received correlation sequence
with a predetermined number of corresponding symbols from the
additional part at the second end of the received training
sequence.

16.   (New)   An apparatus as in claim 15, wherein the means for
performing a plurality of correlations is configured to perform a
set of correlations of the calculated correlation sequence with a
replica of the transmitted training sequence, with the set of
correlations including a first correlation in which the calculated
correlation sequence is aligned with the replica correlation
sequence and including subsequent correlations performed with the
calculated correlation sequence shifted for each next correlation
by one or more symbols from the position in the immediately
preceding correlation.